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(54) **SOI SEMICONDUCTOR DEVICE AND  
FABRICATION THEREOF**

(57) Abstract:

**PROBLEM TO BE SOLVED:** To provide a semiconductor device in which wells formed in an SOI substrate are isolated perfectly and the potential of the well can be varied dynamically by controlling a bias voltage being applied to a well contact.

**SOLUTION:** The SOI semiconductor device comprises an SOI substrate laminated with a buried insulating film 2 and a surface semiconductor layer 3, wells 11, 21 formed in the surface semiconductor layer 3, and transistors 14, 24 formed in the wells 11, 21. The wells 11, 21 are isolated by a perfect well isolation film 4 extending from the surface of the semiconductor layer 3 to the buried insulating film 2 and well contacts 15, 25 for applying bias voltage are provided. The transistors 14, 24 are isolated by an isolation film 5 formed on the surface of the surface semiconductor layer 3 and a channel region constituting the transistors 14, 24 is depleted thus depleting the underside of source-drain regions 12, 22 completely.

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